

IN THE CLAIMS:

Please cancel claims 3, 8 and 11-16 without prejudice to or disclaimer of the recited subject matter.

Please amend Claims 1, 5-7, 9 and 10 as follows:

1. (Currently Amended) An information processing method of receiving encoded image data compression-coded for each ~~tile~~spatial rectangle region that constitutes an image and encrypting the encoded image data, characterized by comprising:

repeatedly forming one spatial rectangle region ~~tile~~-group from a plurality of adjacent spatial rectangle regions ~~tiles~~-and another ~~tile~~spatial rectangle region group from a plurality of adjacent spatial rectangle region ~~tile~~-groups so as to define a hierarchical structure of spatial rectangle region ~~tile~~-groups, dividing encoded data of a spatial rectangle region ~~tile~~-located at a terminal of the hierarchical structure into a plurality of partial encoded data regarding resolution or quality, and arranging the partial encoded data toward the terminal in descending order based on the resolution or quality so that partial encoded data of lowest resolution or lowest quality is arranged at the terminal of the hierarchical structure, thereby defining a tree structure that has as nodes the respective spatial rectangle region ~~tile~~-groups, the respective spatial rectangle region~~stiles~~, and the respective partial encoded data;

assigning identification information uniquely identifying each node to each node in the hierarchical structure;

generating encryption key information for a node located at an uppermost layer of the tree structure for an entire image expressed by the encoded image data;

executing, up to a node located at the terminal, processing for generating encryption key information for a node of interest on the basis of encryption key information generated for a node located at an upper layer, identification information assigned to the node of interest and a one-way function, so as to generate the encryption key information for each node;

designating, in the tree structure, the position of a desired node among the plurality of partial encoded data;

setting, as an object to be encrypted, partial encoded data designated in said designating step and partial encoded data at a higher layer than the layer of the designated partial encoded data; and

encrypting each partial encoded data set in said setting step using the generated encryption key information corresponding to each node.

2-3. (Canceled)

4. (Original) The method according to claim 1, characterized in that the encryption key information of the uppermost layer is output to a predetermined authentication server on the Internet.

5. (Currently Amended) The method according to claim 1, characterized in that the method further comprises a step of displaying ~~the received encoded data as a hierarchical structure of tiles, tile groups, and partial encoded data, and~~ a figure representing the tree structure with nodes including spatial rectangle region groups, spatial rectangle regions and partial encoded data,

~~wherein, in said designating step, the position of a desired node~~the desired partial encoded data of the desired layer is designated from the ~~hierarchical tree~~ structure displayed in the display step.

6. (Currently Amended) An information processing apparatus for receiving encoded image data compression-coded for each ~~tile~~ spatial rectangle region that constitutes an image and encrypting the encoded image data, characterized by comprising:

means for repeatedly forming one spatial rectangle region ~~tile~~-group from a plurality of adjacent spatial rectangle regions ~~tiles~~ and another spatial rectangle region ~~tile~~-group from a plurality of adjacent spatial rectangle region ~~tile~~-groups so as to define a hierarchical structure of

spatial rectangle region ~~tile~~-groups, dividing encoded data of a spatial rectangle region ~~tile~~ located at a terminal of the hierarchical structure into a plurality of partial encoded data regarding resolution or quality, and arranging the partial encoded data toward the terminal in descending order based on the resolution or quality so that partial encoded data of lowest resolution or lowest quality is arranged at the terminal of the hierarchical structure, thereby defining a tree structure that has as nodes the respective spatial rectangle region ~~tile~~-groups, the respective spatial rectangle region~~tiles~~, and the respective partial encoded data;

means for assigning identification information uniquely identifying each node to each node in the hierarchical structure;

means for generating encryption key information for a node located at an uppermost layer of the tree structure for an entire image expressed by the encoded image data;

means for executing, up to a node located at the terminal, processing for generating encryption key information for a node of interest on the basis of encryption key information generated for a node located at an upper layer, identification information assigned to the node of interest and a one-way function, so as to generate the encryption key information for each node;

designating, in the tree structure, the position of a desired node among the plurality of partial encoded data;

setting, as an object to be encrypted, partial encoded data designated in said designating step and partial encoded data at a higher layer than the layer of the designated partial encoded data; and

encrypting each partial encoded data set in said setting step using the generated encryption key information corresponding to each node.

7. (Currently Amended) A computer program, embodied in a computer-readable medium, which causes a computer that reads and executes the program to function as an information processing apparatus for receiving encoded image data compression-coded for each spatial rectangle region that constitutes an image ~~tile~~ and encrypting the encoded image data, characterized by comprising:

means for repeatedly forming one spatial rectangle region tile-group from a plurality of adjacent spatial rectangle regions tiles and another spatial rectangle region tile-group from a plurality of adjacent spatial rectangle region tile-groups so as to define a hierarchical structure of spatial rectangle region tile-groups, and dividing encoded data of a spatial rectangle region tile located at a terminal of the hierarchical structure into a plurality of partial encoded data regarding resolution or quality, and arranging the partial encoded data toward the terminal in descending order based on the resolution or quality so that partial encoded data of lowest resolution or lowest quality is arranged at the terminal of the hierarchical structure, thereby defining a tree structure that has as nodes the respective spatial rectangle region tile-groups, the respective spatial rectangle region tiles, and the respective partial encoded data;

means for assigning identification information uniquely identifying each node to each node in the hierarchical structure;

means for generating encryption key information for a node located at an uppermost layer of the tree structure for an entire image expressed by the encoded image data;

means for executing, up to a node located at the terminal, processing for generating encryption key information for a node of interest on the basis of encryption key information generated for a node located at an upper layer, identification information assigned to the node of interest and a one-way function, so as to generate the encryption key information for each node;

designating, in the tree structure, the position of a desired node among the plurality of partial encoded data;

setting, as an object to be encrypted, partial encoded data designated in said designating step and partial encoded data at a higher layer than the layer of the designated partial encoded data; and

encrypting each partial encoded data set in said setting step using the generated encryption key information corresponding to each node.

8. (Canceled)

9. (Currently Amended) An information processing method of receiving information containing encoded image data compression-coded for each spatial rectangle region that constitutes an image, said encoded image data containing both encrypted data and unencrypted data, of both encrypted and unencrypted tiles and reproducing an image, characterized by comprising:

repeatedly forming one ~~tile~~ spatial rectangle region group from a plurality of adjacent spatial rectangle regions ~~tiles~~ and another spatial rectangle region ~~tile~~ group from a plurality of adjacent spatial rectangle region ~~tile~~ groups on the basis of the received information so as to define a hierarchical structure of the tile groups, dividing encoded data of a spatial rectangle region ~~tile~~ located at a terminal of the hierarchical structure into a plurality of partial encoded data regarding resolution or quality, and arranging the partial encoded data toward the terminal in ~~ascending~~ descending order based on the resolution or quality so that partial encoded data of lowest resolution or lowest quality is arranged at the terminal of the hierarchical structure, thereby defining a tree structure that has as nodes the respective spatial rectangle region ~~tile~~ groups, the respective spatial rectangle region ~~tiles~~, and the respective partial encoded data;

assigning identification information uniquely identifying each node to each node in the hierarchical structure;

receiving key information ,which is assigned to a spatial rectangle region, to be used to decrypt ~~a tile~~ the spatial rectangle region containing encrypted partial encoded data;

sequentially generating key information up to desired partial encoded data located at a lower layer of ~~a tile~~ the spatial rectangle region of interest on the basis of the received key information ~~of the tile,~~ identification information assigned to the node of the spatial rectangle region, and a one-way function, so as to generate the key information for each node; and

decrypting each encrypted partial encoded data by using the key information generated for each partial encoded data.

10. (Currently Amended) An information processing apparatus for receiving information containing encoded image data of both encrypted and unencrypted tiles compression-coded for each spatial rectangle region that constitutes an image, said encoded

image data containing both encrypted data and unencrypted data, and reproducing an image,
characterized by comprising:

means for repeatedly forming one ~~tile~~ spatial rectangle region group from a plurality of adjacent spatial rectangle regions ~~tiles~~ and another spatial rectangle region ~~tile~~ group from a plurality of adjacent spatial rectangle region ~~tile~~ groups on the basis of the received information so as to define a hierarchical structure of the tile groups, dividing encoded data of a spatial rectangle region ~~tile~~ located at a terminal of the hierarchical structure into a plurality of partial encoded data regarding resolution or quality, and arranging the partial encoded data toward the terminal in descending order based on the resolution or quality so that partial encoded data of lowest resolution or lowest quality is arranged at the terminal of the hierarchical structure, thereby defining a tree structure that has as nodes the respective spatial rectangle region ~~tile~~ groups, the respective spatial rectangle region ~~tiles~~, and the respective partial encoded data;

means for assigning identification information uniquely identifying each node to each node in the hierarchical structure;

means for receiving key information, which is assigned to a spatial rectangle region, to be used to decrypt a ~~tile~~ the spatial rectangle region containing encrypted partial encoded data;

means for sequentially generating key information up to desired partial encoded data located at a lower layer of a ~~tile~~ the spatial rectangle region of interest on the basis of the received key information ~~of the tile,~~ identification information assigned to the node of the spatial rectangle region and a one-way function, so as to generate the key information for each node;
and

means for decrypting each encrypted partial encoded data by using the key information generated for each partial encoded data.

11-16. (Canceled)